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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/577,238	05/23/2000	Ying-wai Ho	103-1	3622

7590

04/20/2004

Truong T Dinh
Dinh & Associates
2506 Ash Street
Palo Alto, CA 94306

EXAMINER

DO, CHAT C

ART UNIT	PAPER NUMBER
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2124

18

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/577,238

Applicant(s)

HO ET AL.

Examiner

Chat C. Do

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,4,9-19,21,22 and 26-29 is/are allowed.
- 6) ☒ Claim(s) 1,2,8,20,23 and 30-32 is/are rejected.
- 7) ☒ Claim(s) 5-7 and 24-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment B, filed 1/20/2004.
2. Claims 1-32 are pending in this application. Claims 1, 3, 9-10, 13, 16-17, 20-21, 23, 26-27, and 29-32 are independent claims. In Amendment A, claims 1-2, 5-7, 9-15, 20, 22-25, 27-28, and 30-32 are amended. This action is made non-final after a Request for Continued Examination filed 01/20/2004.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 20, 23, and 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by the admitted prior art.

Re claim 1, the admitted prior art discloses a floating-point unit configurable to perform floating-point operations (page 2 lines 23-33) comprising an operand processing section operative to, for each floating-point operation, receive and process one or more input operands to provide a preliminary result comprised of a mantissa and an exponent (page 2 lines 14-16); and an operand flush section coupled to the operand processing section and operative to check at least the exponent of the preliminary result to determine whether the preliminary result falls within one of a plurality of ranges of denormalized

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values between zero and a minimum normalized floating-point number (page 2 lines 19-23 wherein a minimum normalized floating-point number is a_{\min}), and set the preliminary result to one of a plurality of set values if the preliminary result falls within one of the plurality of ranges of denormalized values (page 2 lines 19-23) wherein each set value is defined by a particular exponent value and a particular mantissa value.

Re claim 2, the admitted prior art further discloses in the operand flush section is operative to set the preliminary result to one of two set values if it falls within one of two ranges of values between zero and minimum normalized floating-point number (page 3 lines 13-18).

Re claim 20, it is a processor claim of claim 1 which including an instruction unit and memory unit for storing the instructions. Thus, claim 20 is also rejected under the same rationale in the rejected claim 1.

Re claim 23, it is the method claim of claim 1. Thus, claim 23 is also rejected under the same rationale in the rejected claim 1.

Re claim 30, it is the article of manufacture claim of claim 1 which includes the computer readable program code. Thus, claim 30 is also rejected under the same rationale in the rejected claim 1.

Re claim 31, it is the article of manufacture claim of claim 1 which includes the computer readable program code. Thus, claim 31 is also rejected under the same rationale in the rejected claim 1.

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Re claim 32, it is the article of manufacture claim of claim 1 which includes the computer readable program code. Thus, claim 32 is also rejected under the same rationale in the rejected claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over the admitted prior art.

Re claim 8, the admitted prior art does not disclose the floating-point unit can be used to perform a reciprocal operation. However, the examiner takes an official notice that performing reciprocal operation in a floating-point unit was well known in the art at the time the instant invention was made. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to use the disclosed floating-point unit to perform a reciprocal operation because it would enable the operator to perform the reversed operation.

Allowable Subject Matter

7. Claims 3-4, 9-19, 21-22, and 26-29 are allowed.

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8. Claims 5-7 and 24-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1-2, 8, 20, 23, and 30-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

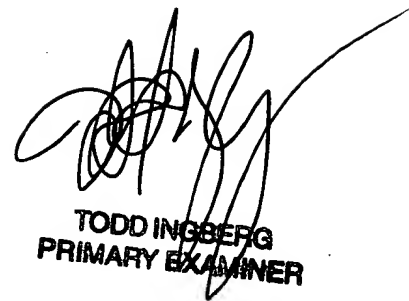
Chat C. Do

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April 12, 2004



TODD INGBERG
PRIMARY EXAMINER